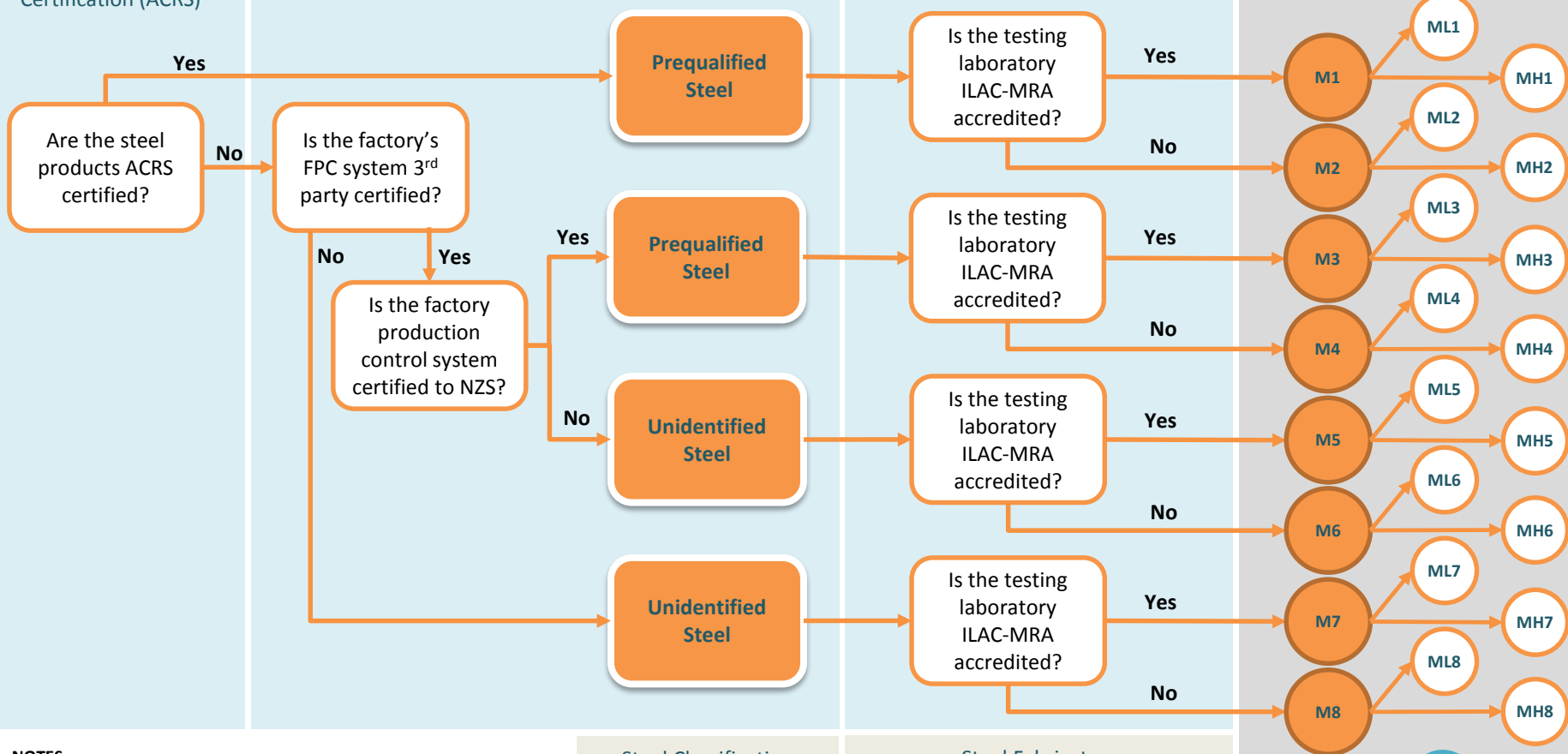


Steel Manufacturers  
Third-party Product  
Certification (ACRS)

Steel Manufacturers  
Factory Production Control (FPC)

Steel Manufacturers  
Lab Accreditation (ILAC-MRA)

Project Risk Level  
Low Risk (L), High Risk (H)



NOTES:

**ACRS:** Australasian Certification Authority for Reinforcing and Structural Steels Scheme

**FPC:** Factory Production Control System

**ILAC-MRA:** International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Agreement (MRA)

**QMS:** Quality Management System

**ISO:** International Organization for Standardization

**SFC:** Steel Fabricator Certification Scheme

**Project risk level:** Project is classified as high risk project when any incident due to poor performance of the structural steel will cause one or a combination of the following situations:

1. Injuries or death of large number of people
2. Damage to properties of significant value
3. Negative local and international publicity that damages Auckland Council's public credibility and trust

Steel Classification

Prequalified Steel

Unidentified Steel

Steel Fabricators  
Third-party QMS Certification

Is the fabricator's QMS ISO9001 / ISO3834 or SFC certified?

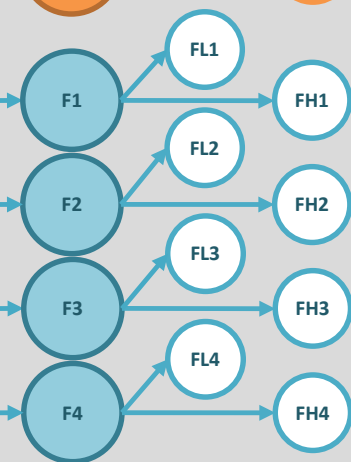
Is the fabricator's QMS ISO9001 / ISO3834 or SFC certified?

Yes

No

Yes

No



STRUCTURAL STEEL CONFORMITY ASSURANCE REQUIREMENTS																
	Steel Manufacturers															
ITEMS	STEEL MANUFACTURER CATEGORIES															
ACTIONS TO BE TAKEN	ML1	MH1	ML2	MH2	ML3	MH3	ML4	MH4	ML5	MH5	ML6	MH6	ML7	MH7	ML8	MH8
Steels shall demonstrate compliance with NZS 3404.1:2009, AS/NZS 1554.1 and other relevant Standards.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steels shall not be used as elements in seismic-resisting system.					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steels shall not be used in structural system subject to inelastic demand or subject to moment redistribution.					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Identify Construction Reviewer (CR)* of the project, ideally Design Engineer supported by a Welding Engineer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Appoint a suitably qualified Metallurgist or Materials Engineer.***									✓	✓	✓	✓	✓	✓	✓	✓
Metallurgist approves equivalent internationally recognized Standard.									✓	✓	✓	✓	✓	✓	✓	✓
Metallurgist demonstrates steel's compliance with equivalent Standard.									✓	✓	✓	✓	✓	✓	✓	✓
Design Engineer/CR certifies that particular physical properties of the steel and its weldability will not adversely affect the strength and serviceability of the structure.									✓	✓	✓	✓	✓	✓	✓	✓
Contractor to prepare Compliance Document and Project Quality Plan.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Appoint a suitably qualified local QA representative and/or a local third-party inspector.***					✓	✓	✓	✓	✓		✓					
Appoint a suitably qualified NZ QA representative and/or a NZ third-party inspector.***										✓		✓	✓	✓	✓	✓
CR/QA representative review manufacturer's QMS documentations and Project Quality Plan.**					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steel products should undergo 100% visual inspection at manufacturing facility by an independent suitably qualified person appointed by CR.***													✓	✓	✓	✓
Testing at an ILAC-MRA accredited lab on behalf of the manufacturer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Local independent third-party testing – FULL testing - Random samples from Each batch/heat of product should be independently tested for mechanical properties and chemical composition at an independent ILAC-MRA accredited test facility.					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NZ independent third-party testing – FULL testing - Random samples from Each batch/heat of product should be independently tested for mechanical properties and chemical composition at an ILAC-MRA accredited test facility in NZ.^														✓		✓
NZ independent third-party testing – PARTIAL testing - Random samples of product should be independently tested for mechanical properties and chemical composition at an ILAC-MRA accredited test facility in NZ.^		✓		✓		✓		✓		✓		✓	✓		✓	
Traceability - Product marking at the time of production to ensure the tested material is traceable to a heat of steel for product used in the project and the grade of steel remain identifiable.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
DOCUMENTS TO BE SUBMITTED TO COUNCIL																
Valid ACRS Certificates****	✓	✓	✓	✓												
Valid FPC Certificates****					✓	✓	✓	✓	✓	✓	✓	✓				
Valid ILAC-MRA Accreditation Certificates****	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Metallurgist's qualifications/certificates***									✓	✓	✓	✓	✓	✓	✓	✓
Metallurgist's report to approve equivalence and compliance of steel									✓	✓	✓	✓	✓	✓	✓	✓
Design Engineer's approval of the use of steel									✓	✓	✓	✓	✓	✓	✓	✓
Contractor's Compliance Document and Project Quality Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
QA representative's qualifications/certificates***					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CR or QA representative's QMS review report**					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manufacturer's QMS documentations - quality control manual & project quality control plan**					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manufacturer's QMS documentations - personnel qualifications***					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Visual inspector's qualifications/certificates***													✓	✓	✓	✓
Visual inspection reports													✓	✓	✓	✓
Mill certificates - lab testing on behalf of the manufacturer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test reports - local independent third-party testing					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Test reports - NZ independent third-party testing		✓		✓		✓		✓		✓		✓	✓	✓	✓	✓
Other documents that form part of the production control record					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

# STRUCTURAL STEEL CONFORMITY ASSURANCE REQUIREMENTS

## Steel Fabricators

ITEMS	STEEL FABRICATOR CATEGORIES							
	FL1	FH1	FL2	FH2	FL3	FH3	FL4	FH4
<b>ACTIONS TO BE TAKEN</b>								
Steels shall demonstrate compliance with NZS 3404.1:2009, AS/NZS 1554.1, and other relevant Standards.	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS shall comply with the requirements of AS/NZS ISO 3834 (SAA/NZS 2008).**	✓	✓	✓	✓	✓	✓	✓	✓
Contractor to prepare Compliance Document and Project Quality Plan.	✓	✓	✓	✓	✓	✓	✓	✓
All suppliers that supply welding consumables, bolts and connectors for the project shall be listed in the Compliance Document.	✓	✓	✓	✓	✓	✓	✓	✓
Welding consumables, bolts and connectors shall be tested at an ILAC-MRA or IANZ accredited laboratory.	✓	✓	✓	✓	✓	✓	✓	✓
Appoint a suitably qualified local QA representative and/or a local third-party inspector.***	✓	✓	✓	✓				
Appoint a suitably qualified NZ QA representative and/or a NZ third-party inspector.***					✓	✓	✓	✓
CR/QA representative review fabricator's QMS documentations and Project Quality Plan.**	✓	✓	✓	✓	✓	✓	✓	✓
QA representative undertakes site visit, review QMS and draft inspection and testing reports, and interview personnel at the fabricator's facilities.**	✓	✓	✓	✓	✓	✓	✓	✓
In-shop construction monitoring - CR shall have a presence in the fabricator's workshop for the duration of the fabrication works by either CR or the QA representative/inspector acting on CR's behalf.	✓	✓	✓	✓	✓	✓	✓	✓
Local independent third-party welding and coating inspection and NDT testing by a ILAC-MRA or IANZ laboratory accredited to AS/NZS ISO 3834.	✓	✓	✓	✓	✓	✓	✓	✓
NZ independent third-party NDT and coating testing – PARTIAL testing - Random samples of product shall be tested at an ILAC-MRA or IANZ accredited test facility in NZ.^	✓	✓	✓	✓	✓	✓	✓	✓
NZ independent third-party destructive testing – PARTIAL testing - Random samples of product shall be tested at an ILAC-MRA or IANZ accredited test facility in NZ.^	✓	✓	✓	✓	✓	✓	✓	✓
Traceability - Steel products must demonstrate traceability in compliance with the requirements in NZS 3404.1:2009, AS/NZS 1554.1 and other relevant Standards. The delivered material must be accompanied by test certificates to verify that the steel grade is correct. Where the steel is unidentified steel, FULL traceability shall be demonstrated for all members regardless of the grades.	✓	✓	✓	✓	✓	✓	✓	✓
<b>DOCUMENTS TO BE SUBMITTED TO COUNCIL</b>								
Valid ISO 9001/ISO 3834 Certificates****	✓	✓			✓	✓		
Valid SFC Certificates****	✓	✓			✓	✓		
Valid ILAC-MRA or IANZ Accreditations****	✓	✓	✓	✓	✓	✓	✓	✓
Contractor's Compliance Document and Project Quality Plan	✓	✓	✓	✓	✓	✓	✓	✓
QA representative's qualifications/certificates***	✓	✓	✓	✓	✓	✓	✓	✓
CR or QA representative's QMS review report**	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - quality manual/project quality plan**	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - written producion and testing procedures and instructions**	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - qualifications - welders***	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - qualifications - welding supervisors***	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - qualifications - in-house welding inspectors***	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - qualifications - in-house NDT inspectors***	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - qualifications - coating applicators***	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - qualifications - coating inspectors***	✓	✓	✓	✓	✓	✓	✓	✓
Fabricator's QMS documentations - inspection and testing plan (ITP)**	✓	✓	✓	✓	✓	✓	✓	✓
CR or QA representative's in-shop monitoring and inspection reports**	✓	✓	✓	✓	✓	✓	✓	✓
In-house inspection reports	✓	✓	✓	✓	✓	✓	✓	✓
In-house NDT testing reports	✓	✓	✓	✓	✓	✓	✓	✓
Local third-party inspection and NDT testing reports	✓	✓	✓	✓	✓	✓	✓	✓
NZ third-party inspection and NDT testing reports	✓	✓	✓	✓	✓	✓	✓	✓
NZ third-party destructive testing reports	✓	✓	✓	✓	✓	✓	✓	✓
Other documents that form part of production control record	✓	✓	✓	✓	✓	✓	✓	✓

## NOTES:

\* Construction Reviewer's responsibilities include, but not limited to, the following:

- The design is being correctly interpreted.
- The construction techniques are appropriate and do not compromise the effectiveness of the design.
- The work is generally completed in accordance with the plans and specifications.
- Review shop drawings.
- Address matters to be resolved for welded construction including approval of the welding procedures, see Appendix D AS/NZS 1554.1.
- Arrange for third-party weld and protective coating inspection and testing as required by the contract documents.
- Review fabricator execution documents (mill certificates, weld inspection reports etc.).
- Undertake site inspections of fabricated components in the workshop and on-site.
- Issue a producer statement PS4 at the completion of the project, stating all the building structure works, including the structural steelwork, is in accordance with the consent documents.

\*\* Key elements of a manufacturing or production control system CR or QA representative shall examine when evaluating steel manufacturer or fabricator's QMS (ECCS 2012):

- Traceability and component marking.
- Weld quality management.
- Contract and technical review.
- Acceptance of materials (structural steels, weld consumables, bolts).
- Personnel.
- Subcontracting.
- Fabrication processes (milling, drilling, cambering, thermal and mechanical cutting, and protective coatings).
- Equipment (maintenance regime, inspections, calibration).
- Corrective measures for non-conformance.
- Documentation control.
- Inspection and testing.
- Production records.

AS/NZS ISO 3834 requires the fabricator to have written procedures and instructions to ensure they have control over the welding process and, as a consequence, welding is consistently undertaken to the required standard. This standard identifies the typical documentation required to demonstrate control over the welding activities. These procedures/ instructions cover such items as (ECCS 2012):

- Reviewing contract/technical requirements.
- Subcontracting.
- Qualification of procedures and personnel for welding and inspection.
- Storage and handling of consumables.
- Equipment maintenance/calibration.
- Production/inspection plans.
- Repair procedures.
- Traceability record.
- Documentation control.

\*\*\* Qualifications of personnel involved are subject to Auckland Council's approval as to their appropriateness and adequateness.

\*\*\*\* Accreditations and Certifications of manufacturers, fabricators, and testing laboratories involved are subject to Auckland Council's approval as to their appropriateness and adequacy.

^ Where FULL testing is required, random samples shall be selected from each and every batch/heat of products to be tested. Where PARTIAL testing is required, the percentage of products to be tested is subject to Auckland Council's decision. ALL samples shall be selected randomly by Auckland Council's representative.